

Curriculum Vitae: Venkatramani BALAJI

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Degrees Ph.D (Physics), Ohio State University.
 M.Sc (Physics), Indian Institute of Technology, Kanpur.

Recent funded proposals

NOAA IOOS/DMAC Award: “Linking Global and Regional IOOS Capabilities - An Oceans and Rivers to Coasts Demonstration”, 2006: \$100,000.

NSF Award IIS-0513762: “Collaborative Research: Earth System Curator: Spanning the Gap Between Models and Datasets”, 2005-2007: \$287,668.

NASA Award ESE-NN-H-04-Z-YS-008-N: “Development of Standard Implementation Practices and Productivity Software for ESMF-Based MAP Systems”, 2005-2007: \$300,000.

NASA Project Columbia Award: “Modeling of entire hurricane season using high-resolution non-hydrostatic models”, 2006: 900,000 CPU-hours.

NASA Project Columbia Award: “Coupled Ocean and Atmosphere Data Assimilation System for Climate of the 20th Century”, 2005: 500,000 CPU-hours.

NASA Project Columbia Award: “Modeling of entire hurricane season using high-resolution non-hydrostatic models”, 2005: 500,000 CPU-hours.

NASA Project Columbia Award: “Coupled Ocean and Atmosphere Data Assimilation System for Climate of the 20th Century”, 2005: 200,000 CPU-hours.

NASA Award S-44-829-X: “Earth System Modeling Framework”, 2002-2005: \$450,000.

Recent refereed publications

Shujia Zhou, V. Balaji, Carlos Cruz, Arlindo da Silva, Chris Hill, Erik Kluzek, Shep Smithline, Atanas Trayanov, Weiyu Yang, 2006: Coupling Weather and Climate Models with the Earth System Modeling Framework. Accepted for publication in *Concurrency and Computation*.

V. Balaji, Jeff Anderson, Isaac Held, Michael Winton, Jeff Durachta, Sergey Malyshev and Ronald J. Stouffer, 2006: “The Exchange Grid: a mechanism for data exchange between Earth System components on independent grids”, *Parallel Computational Fluid Dynamics: Theory and Applications, Proceedings of the 2005 International Conference on Parallel Computational Fluid Dynamics*, Elsevier (2006).

Nancy Collins, Gerhard Theurich, Cecelia DeLuca, Max Suarez, Atanas Trayanov, V. Balaji, Peggy Li, Weiyu Yang, Chris Hill and Arlindo da Silva, 2005: Design and Implementation of Components in the Earth System Modeling Framework. *International Journal of HPC Applications*, **19**, 341–350.

Gnanadesikan *et al* 2005: GFDL's CM2 global coupled climate models, Part 2. The baseline ocean simulation. *J. Clim.*, **19**, p. 675–697.

Delworth *et al* 2005: GFDL's CM2 global coupled climate models, Part 1. Formulation and simulation characteristics. *J. Clim.*, **19**, p. 643–674..

GFDL Global Atmospheric Model Development Team, 2004: The new GFDL global atmosphere and land model AM2-LM2: Evaluation with prescribed SST simulations. *J. Clim.*, 17(24), 4641–4673

Zhang, S., M. J. Harrison, A. Wittenberg, A. Rosati, J. L. Anderson and V. Balaji, 2005: Initialization of an ENSO Forecast System using a Parallelized Ensemble Filter. *Mon. Wea. Rev.*, **133**, 3176–3201.

Other publications

V. Balaji and Robert Numrich, 2005: “A Uniform Memory Model for Distributed Data Objects on Parallel Architectures”, *Use of High-Performance Computing in Meteorology*, Proceedings of the XIth ECMWF Workshop, pp. 272–294.

“The FMS Manual, a design, implementation and use guide to the Flexible Modeling System.”, 2005.

Recent invited talks

Unidata Workshop on Community Standards for Unstructured Grids, Boulder CO, 17-18 October 2006: “Grids, meshes and mosaics.”

CRRC Fall Institute on Innovative Coastal Modeling for Decision Support: Integrating Physical, Biological, and Toxicological Models, Durham NH, 26-28 September 2006: “Frameworks for Climate Modeling”.

Keynote Speech, Coastal Inundation Workshop, Jacksonville, 14 February 2006: “Introduction to the Earth System

Keynote Speech, PRISM Workshop, Toulouse, 16 November 2005: “Convergence of model frameworks and data frameworks.” Modeling Framework”.

PRISM Workshop, Toulouse, 16 November 2005: “Standard representation of grids used in Earth system modeling.”

CAS2K5, Annecy, France, 14 September 2005: “Earth System Curator: Integration technology for Earth system models and data”.

ESMF Community Meeting, Cambridge, 21 July 2005: “Earth System Curator: Integration technology for Earth system models and data”.

Recent workshops organized

Ocean Model Coupling Workshop, Princeton, 7 February 2007.

First Earth System Curator Workshop, Princeton, 27-28 September 2006.

PRISM/ESMF Metadata Meeting, Exeter UK, 9-11 May 2006.

Professional activities, committees, peer review, etc

Head, Modeling Systems Group, GFDL Princeton University.

Leader, Modeling Infrastructure Team, GFDL Princeton University.

Technical Lead, Earth System Modeling Framework (ESMF) development team, 2002-2005.

Member, Executive Committee, ESMF.

Member, Scientific Steering Committee, Program for Integrated Earth System Modeling (PRISM) Project, Europe, 2001-2005.

Member, WGCM Committee on Climate and Forecasting (CF) Conventions, 2006-2010.

Member, Steering Committee, Global Organization of Earth System Science Portals (GO-ESSP).

Lead, e-Science Steering Committee, Asia-Pacific Advanced Network (APAN) Consortium, 2005-2006.

Reviewed papers for *Journal of the Atmospheric Sciences*, *International Journal of HPC Applications*, and *Environmental Modeling and Software*.

Reviewed grant applications for National Environmental Research Council, UK.

Princeton, New Jersey, 23 February 2007